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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,271	01/10/2002	Ga Lane Chen		7843

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WEI TE CHUNG  
FOXCONN INTERNATIONAL, INC.  
1650 MEMOREX DRIVE  
SANTA CLARA, CA 95050

EXAMINER

STEIN, STEPHEN J

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/044,271

Applicant(s)

CHEN ET AL.

Examiner

Stephen J Stein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 16-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6 and 8-15 is/are rejected.
- 7) ☒ Claim(s) 4, 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, claims 1-15 in the reply filed on January 3, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5 and 9 and is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 5 recites the limitation "...-Y<sub>2</sub>O<sub>3</sub> system wherein Y can be aluminum (Al)." This limitation makes the claim unclear to the examiner because it is unclear if the "Y<sub>2</sub>O<sub>3</sub>" can refers to yttria. If not, the examiner suggests using another variable to eliminate ambiguity in the claim.

5. Claim 9 recites the limitation "silicate dioxide". This is unclear to the examiner. Does applicant mean to recite the limitation "silica dioxide"?

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 9-11, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,798,553 (Scobey et al.).

Scobey teaches an optical filter manufactured by providing a substrate wafer of glass, indium phosphide, silica or a silicon wafer (col. 6, lines 21-23), polishing the substrate wafer (col. 14, lines 53-59), then either magnetron or ion beam sputtering (higher than room temperature coating technique) a film stack on the substrate (col. 15, lines 1-3). The reference further teaches that the wedge coating (film stack) can include layers of Ta<sub>2</sub>O<sub>5</sub> and SiO<sub>2</sub> (col. 9, lines 32-38). Scobey finally teaches that the coated substrate may later be cut or diced to form smaller fragments known as coupon which may still further diced into one more static optically coupled etalons (col. 20, lines 44-49). With regard to the claimed substrate CTE, transparency of the substrate, and coating endurance to tensile and compressive stress, it is expected that the disclosed laminate would exhibit these properties since the materials are the same as disclosed by applicant.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scobey as applied to claim 1 above.

Although Scobey fails to teach the claimed average roughness of the substrate after polishing, absent a showing of criticality with respect to the claimed roughness it would have been obvious to a person of ordinary skill in the art at time of the invention to optimize the polished surface roughness (a result effective variable) through routine experimentation. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scobey in view of US 4,793,908 (Scott et al.).

As stated above, Scobey teaches an optical filter comprising manufactured by providing a substrate wafer, and forming a film stack on the substrate by ion beam sputtering (heated ion beam source with electrical filed acceleration), and dicing the film coated wafer into smaller pieces. Scobey does not specifically teach that the ion beam source is a Kaufman type source and fails to teach the mean energy of the accelerated ions is within the range of 100 to 1500 eVolts.

Scott teaches a method of making an optical stacked antireflective film on a substrate by ion beam sputtering using a Kaufman type ion beam source (col. 6, lines 53-68) and further teaches that electrons are accelerated from the cathode to the anode and have energy of 500-1500 volts (col. 7, lines 10-18). The reference further teaches that Kaufman ion beam source along with the magnets, cause electrons to be accelerated from cathode to the anode and to spiral, and that this spiral motion effectively increases the distance which the electrons travel in reaching any anode surface and thereby increases the probability of an atom ionization through electron collision (col. 7, lines 1-10).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the Kaufman ion beam source at 500 – 1500 volts energy as taught by Scott for the sputtering method disclosed by Scobey because it would provide increased probability of atom ionization at the target surface and therefore provide a more efficient coating process.

***Allowable Subject Matter***

11. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
12. Claims 4, 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
13. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest the claimed glass substrate compositions claimed in dependent claims 4-7.

***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is 572-272-1544. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing 571-272-1535. The official fax number is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 16, 2005



Stephen J. Stein  
Primary Examiner  
Art Unit 1775